DoD Unique IDentification (UID)

The Path to Knowledge Enablement

"Thinking strategically, acting immediately and providing value instantly"

May, 2005

UID: Capstone Directive

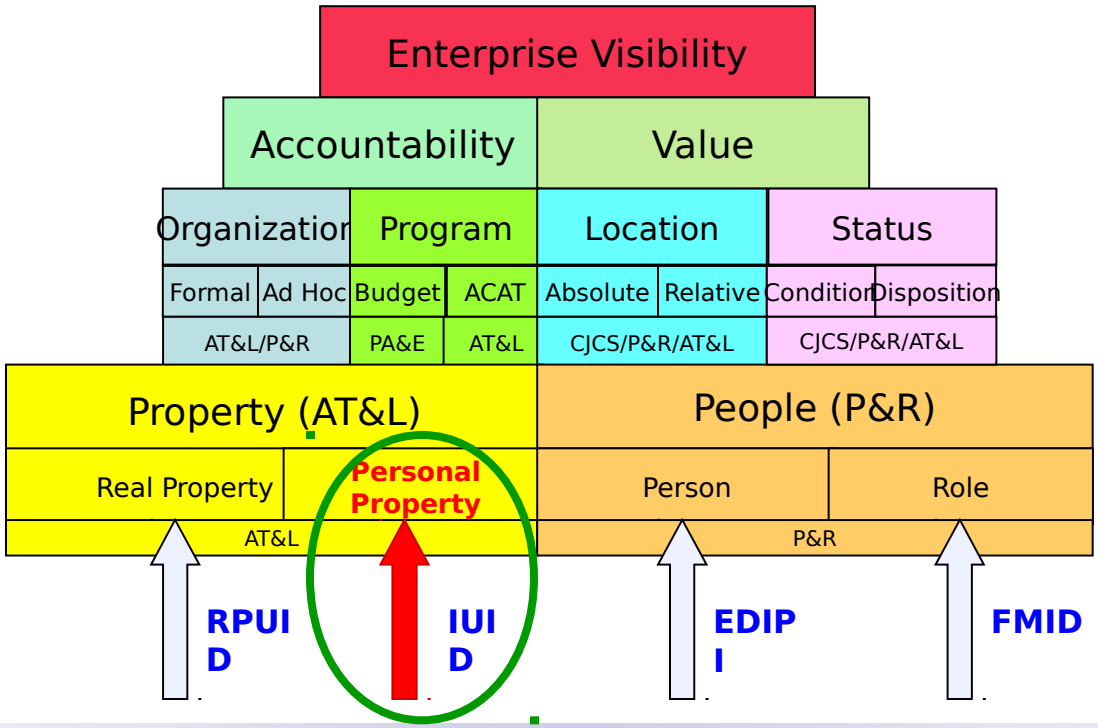
- Prescribes the vision that the DoD, its coalition partners, and industry efficiently and effectively manage people and tangible property using globally unique identification

- Prescribes rules and assigns responsibilities for a process of uniquely identifying tangible entities, their attributes and their relationships within the DoD

Unique Identification – The Capstone View

- **Related ISO UID Initiative**
  - ISO 15459 proposal describes uniqueness beyond “personal property” or “items” (e.g., people, organizations, locations, etc.)

- **US DoD Vision of UID**



Time Line

2007-2008

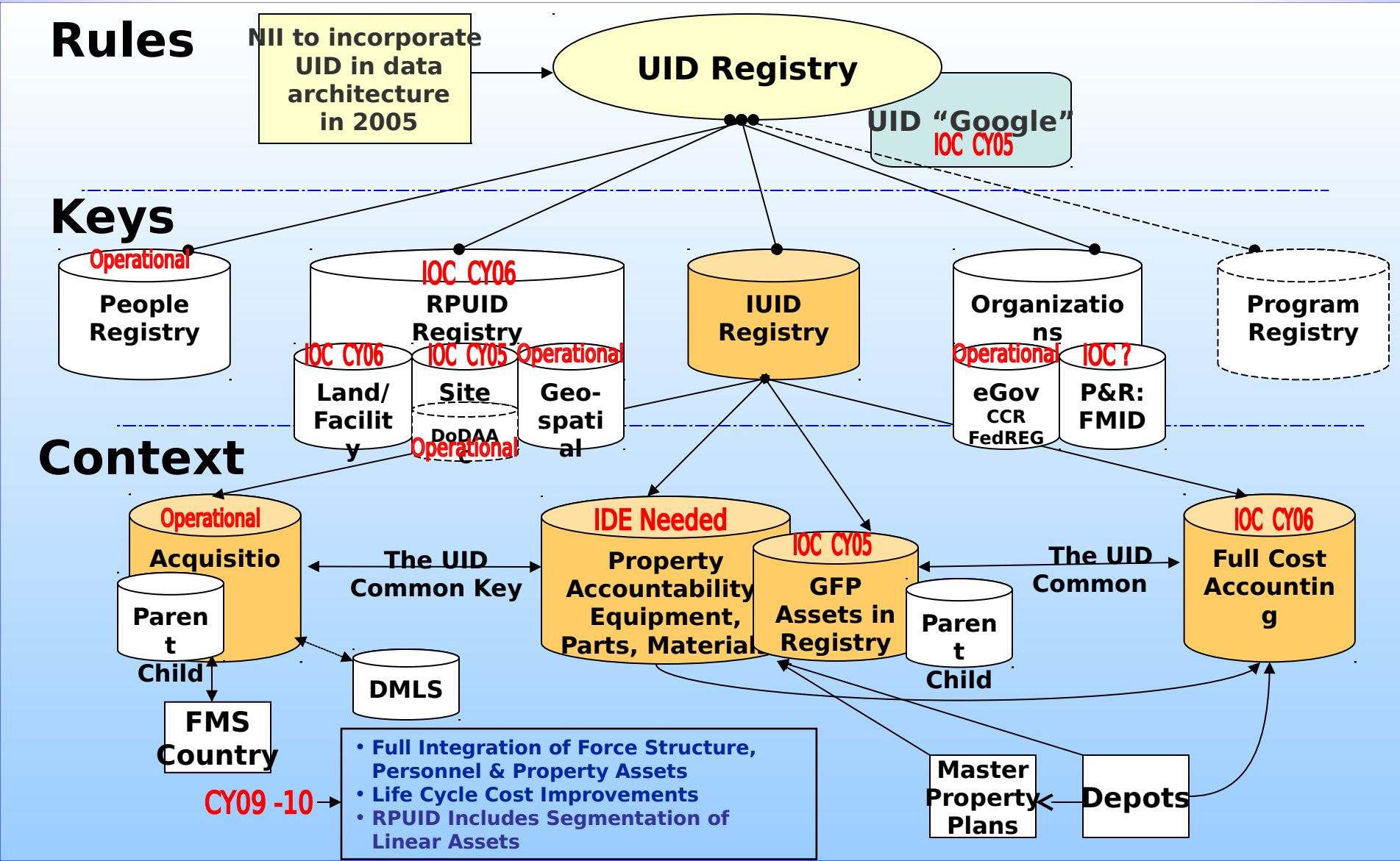
2006-2007
Ability to value and account

2005-
Ability to describe

2006

2002 - 2005

Capstone UID Registry Concept



The Case for Item UID (IUID)

DoD considers the implementation of unique identification to be a strategic imperative, necessary to efficiently move supplies to US and coalition troops. UID will enable DoD to:

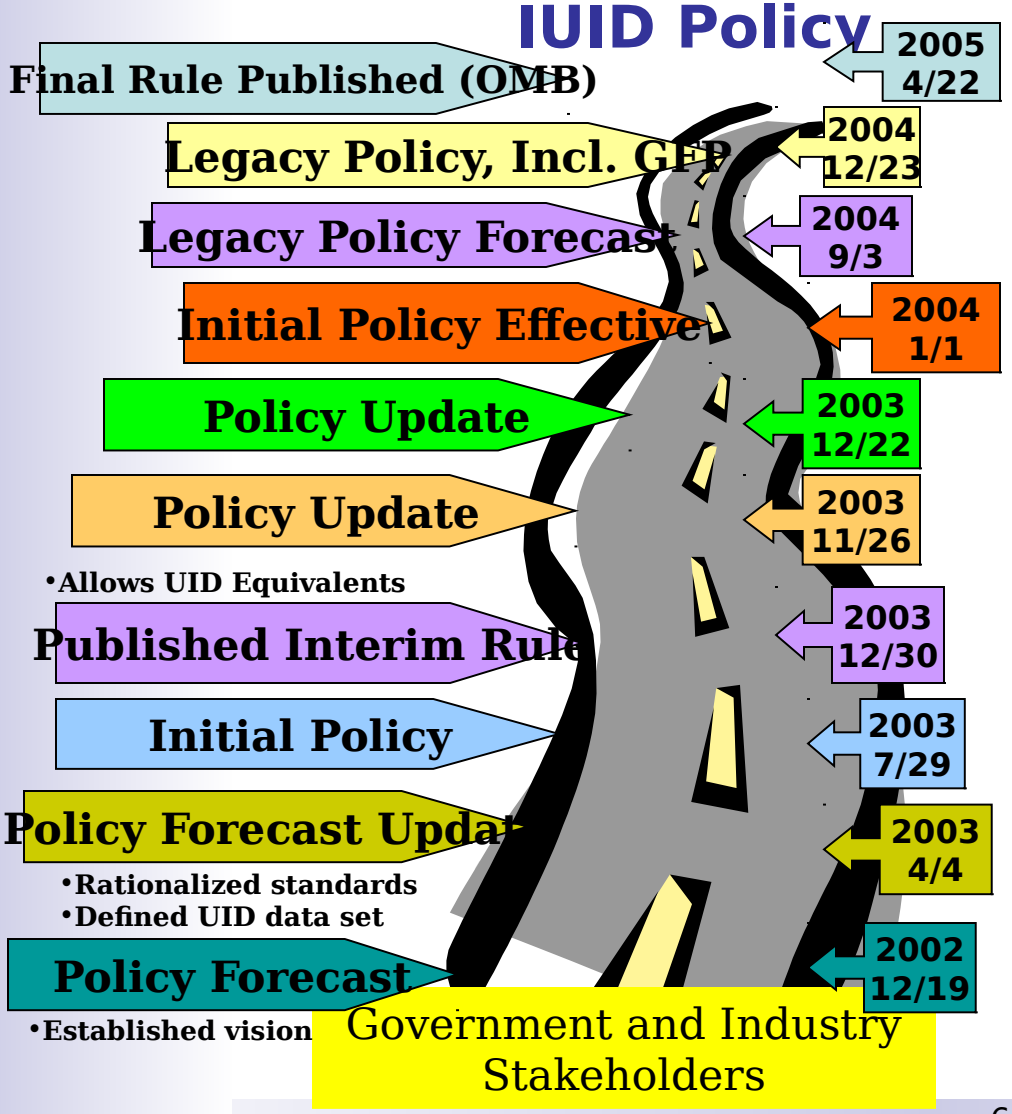
- ✓ Enhance logistics, contracting, and financial business transactions
- ✓ Consistently capture the value of items it buys, control these items during their use, and combat counterfeiting of parts
- ✓ Track items in property accountability, inventory, and financial management systems toward achieving compliance with the Chief Financial Officers Act.

UID Payoffs

- **Increase business intelligence**
- **Achieve clean audit opinion**
- **Increase systems/equipment operational availability**
- **Lower costs of managing assets**
- **Lower asset management infrastructure costs**
- **Increase in-transit visibility**
- **Decrease frustrated freight**
- **Increase productivity**

How has Item Unique Identification Evolved?

IUID Policy



Contracting

- ☑ July 29, 2003 - DoD Policy Memorandum Issued
- ☑ August 6, 2003 - DFARS Case Opened
- ☑ December 30, 2003 – DFARS Interim Rule Published
- ☑ January 1, 2004 – Effective Date
- ☑ March 1, 2004 – Public Comments Received [56]
- ☑ September 3, 2004 – Legacy Policy Forecast Issued
- ☑ December 23, 2004 – Legacy Policy, Including GFP
- ☑ April 22, 2005 – Final Rule (draft to OMB 1/6/05)
- ☑ published

The Interim Rule Added Mandatory Requirement for -

- **Contractors to provide *unique identification* for items delivered to DoD, through the use of item identification marking.**
- **Contracts to provide for identification of the Government's *unit acquisition cost* of all items built or acquired by the contractor and subsequently delivered to DoD under the contract.**

Defining the Scope of IUID

A UII Is	A UII Is Not
✓ A Data Element ✓ A Unique Identifier for an Item ✓ Globally Unique ✓ Unambiguous ✓ Permanent ✓ Created by Concatenating Specific Data Elements ✓ The enabler for business intelligence	✓ A transmitting technology for Communicating Data, such as Radio Frequency Identification (RFID) Tags or Contact Memory Buttons ✓ A Replacement for the National Stock Number ✓ An Intelligent Data String that Yields Information About the Item ✓ Transferable from one item to another

IUID vs RFID

	IUID	RFID
Marking	Item	Packaging
Technology	2D Data Matrix	EPC RFID tag
Purpose	Life cycle data visibility	Supply chain receipt/track
Implementation	January 1, 2004 www.acq.osd.mil/dpap/uid	January 2005 and Beyond http://www.acq.osd.mil/log/rfid/index.htm

Separate but integrated initiatives with
Different technologies
Different business rules

DoD Recognized IUID Equivalents

Criteria for IUID Equivalents

- Must contain an enterprise identifier which is assigned by a registration or controlling authority
- Must uniquely identify an individual item within an enterprise identifier, product or part number
- Must have an existing Data Identifier (DI) or Application Identifier (AI) listed in ANSI MH10, Data Identifier and Application Identifier Standard

DoD Recognized IUID Equivalents

- Global Individual Asset Identifier (GIAI) EAN.UCC (AI:8004)
- Global Returnable Asset Identifier (GRAI) EAN.UCC (AI: 8003)
- Vehicle Identification Number (VIN) ISO 3779 (DI:I)
- Electronic Serial Number (ESN, for cellular telephones only) TIA (DI:22S)

NOTE: A DoD Recognized UID Equivalent <u>MUST</u> be encoded in an ECC 200 Data Matrix Using ISO 15434 Syntax to satisfy the IUID

Item Unique Identification (IUID)

Bridging Business Sector Parts Identification by Expanding ISO 15434

	Before IUID – 2 Interoperable International Business Sectors	After IUID – 3 Interoperable International Business Sectors
American National Standards Institute (ANSI)	**MH 10.8.2: Data Identifiers** **[)>RS06GS17V0CVA5GS1P1234GSS786950RSEoT**	**MH 10.8.2: Data Identifiers** **[)>RS06GS17V0CVA5GS1P1234GSS786950RSEoT**
EAN/UCC	**EAN.UCC: Application Identifiers** **[)>RS05GS8004 06141411A0B9C3D6RSEoT**	**EAN.UCC: Application Identifiers** **[)>RS05GS8004 06141411A0B9C3D6RSEoT**
Air Transport Association	**No existing ISO method**	**Text Element Identifiers:** **[)>RS*DD*GSMFR 0CVA5GSSER 674A36458RSEoT** **Note: DoD UID Program Office formally requested ISO issued numeric format code to replace DoD declared "*DD*" was approved for CD Ballot**

No Change

No Change

Unique Item Identifier (UII) is….

UII is . . .

. . . the set of data for tangible assets that is globally unique and unambiguous, ensures data integrity and data quality throughout life, and supports multi-faceted business applications and users. UII also refers to the concatenated string representing the globally … number”

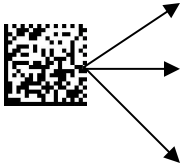
EID	**(12V)194532636**
Orig. Part No.	**(1P)1234**
Serial No.	**(S)786950**

Sample Mark Content

UII…How Is It Constructed?

The concatenated Unique Item Identifier (UII) is derived from its discrete component data elements – the concatenated UII is **not** required to be marked on the item as a separate data element.

From the Data Matrix:



Enterprise Identifier = 0CVA5 (CAGE Code)

Original Part, Lot or Batch Number = 1234

Serial Number = **674A36458**

The first data element in the UII is the Issuing Agency Code (IAC), which is **not** marked on the item, but defined by the data qualifier (e.g. data identifier “17V” is exclusively used for CAGE and the IAC

UII Construct 1	UII Construct 2
If the Serial Number is Unique within the Enterprise Identifier	*If the Serial Number is Not Unique within the Enterprise Identifier but is Unique within the Part, Lot or Batch Number*
D0CVA5674A36458	**D0CVA51234674A36458**

What Items Need IUID?

IUID is required for all personal property items delivered to the Government
when any one or more of the following is true:

- Unit Acquisition Cost is $5,000 or more

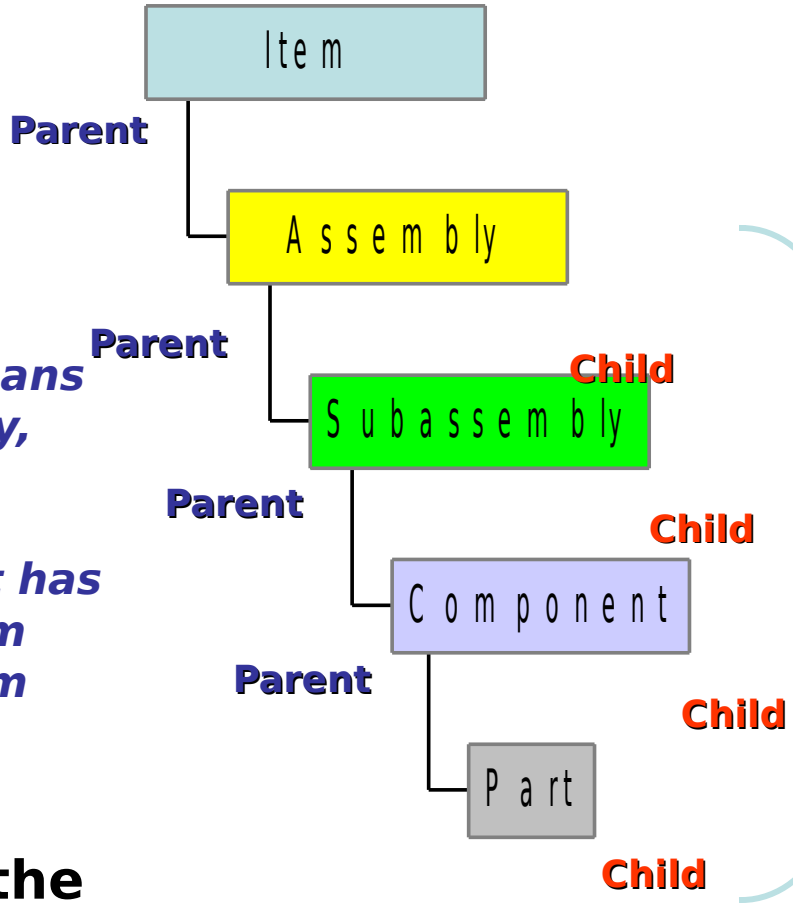
- Item with a Unit Acquisition Cost below $5,000 when it is a DoD Serially Managed,
  Mission Essential, or Controlled Item

- Item with a Unit Acquisition Cost below $5,000, as determined by the Requiring
  Activity (e.g., Maintenance and Repair)

- Regardless of value, any DoD Serially Managed subassembly, component or part
  embedded within an item, and the "**Parent**" item in which it is embedded

- Valuation applies to all items delivered to DoD, to include deliveries under
  T&M contracts

Parent Child Hierarchy



"Parent item" means the item assembly, intermediate component or subassembly that has an embedded item with a unique item identifier or DoD recognized IUID equivalent

Serially managed embedded items

Derived from the requirements of DFARS 211.274

The Only Authorized IUID Exceptions

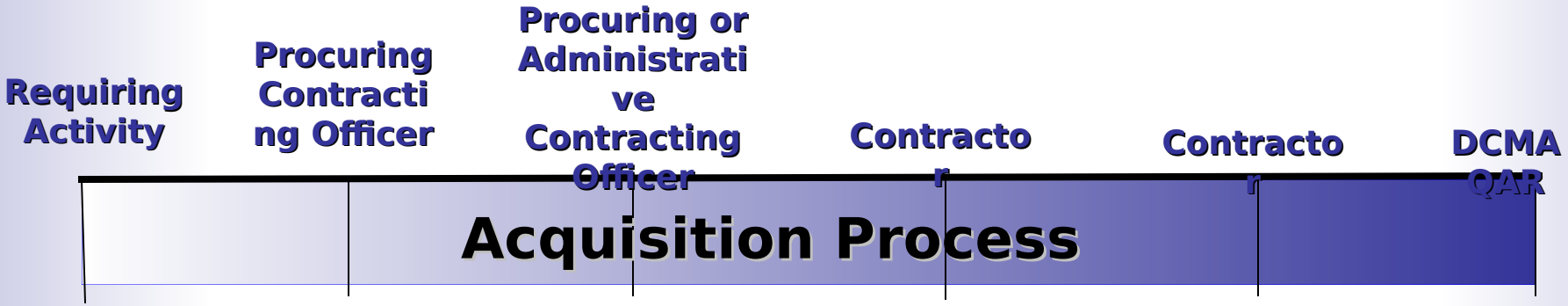
- Contingency Operation –

  (A military operation that is either designated by the Secretary of Defense as a contingency operation or becomes a contingency operation as a matter of law (10 United States code (USC) 101[a][13]). It is a military operation that: a. is designated by the Secretary of Defense as an operation in which members of the Armed Forces are or may become involved in military actions, operations, or hostilities against an enemy of the United States or against an opposing force; or b. is created by definition of law. Under 10 USC 101 (a)(13)(B), a contingency operation exists if a military operation results in the (1) callup to (or retention on) active duty of members of the uniformed Services under certain enumerated statutes (10 USC Sections 688, 12301(a), 12302, 12304, 12305, 12406, or 331-335); and (2) the callup to (or retention on) active duty of members of the uniformed Services under other (non-enumerated) statutes during war or national emergency declared by the President or Congress.)

- Items acquired from a small business or commercial items acquired in accordance with the procedures of FAR Part 8 or Part 12, when –
  - ✓ more cost effective for the Government to assign, mark, and register the UID after delivery, and
  - ✓ HCA approves D&F (CAE for – ACAT I)

- **Alternate I of the clause applies to items that do not require UID because they do not meet the criteria or because an exception applies.**

Who Does What – When?

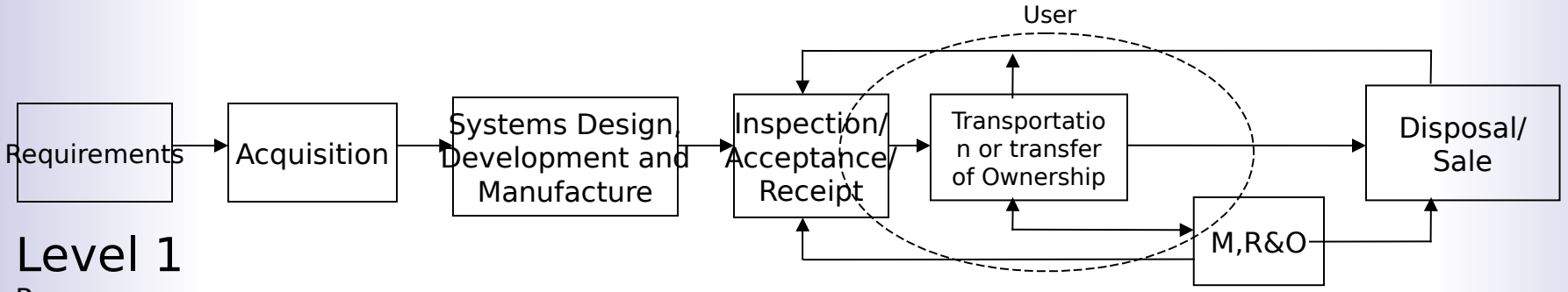


Requiring Activity	Procuring Contracting Officer	Procuring or Administrative Contracting Officer	Contractor	Contractor	DCMA QAR
Determine Items on the contract for which UIIs are required	Issue Solicitation and Award Contract with DFARS Clause 252.211-7003, UID/Valuation Requirement	Contracting Officer issues any necessary modifications (e.g., definitization)	Contractor Places UII Marking on the Item (or receives marked items using subcontractor flowdown) and Prepares Material Inspection & Receiving Report (MIRR)	Contractor Includes UID/Valuation Information on MIRR and submits to UID Registry via WAWF*	Government QAR Inspects & Accepts

**Contractor May Submit UID/Valuation Information to UID Registry via Other Electronic Means After Government Inspection and Acceptance*

http://www.acq.osd.mil/dpap/UID/DataSubmission.htm

Leveraging UID Data Capture/Use



Level 1
Processes

Level 2
Processes

Requirements Mgmt	Supplier Mgmt Procurement Inventory Mgmt Contracts Mgmt	Configuration Mgmt Inventory Mgmt Manufacturing Part Marking Assembly Packaging Distribution/Shipping	Inspection Acceptance Receiving Payment Validation	Loading Hauling Tracking Unloading Inventory Mgmt Property Mgmt X-fer Ownership	Repair Upgrade/Modification Preventative Maint. Failure Analysis Inventory Mgmt Marking/Remarking Configuration Mgmt	Consumption Demilitarize FMS Intra-gov't transfer Inter-gov't transfer Scrap

Level 3
UID Transactions

Identify UID items	Solicitations Contracts Trace-ability	Mark Scan Populate Ship Notice Populate DID/CDRL Populate CM system	Populate Registry Update Inventory	Update PM system Update Inventory Populate Trans. Doc.	Update Registry Update Inventory Update Maint. DB Update CM system Update PM system	Update Registry Update Inventory Record in PM system

UID Legacy/GFP Policy Overview

Final Policy for Unique Identification (UID) of Tangible Personal Property Legacy Items in Inventory and Operational Use, Including Government Furnished Property (GFP), December 23, 2004

- ✓ Does not impact the mandatory UID DFARS clause for new solicitations and contracts issued after January 1, 2004

UID Implementation Plans – an evolutionary approach

- ✓ ACAT 1D program plans due by June 2005 to UID PMO
- ✓ All other program plans due by January 2006 to respective Milestone Decision Authorities
- ✓ Target FY 2007 as point for all existing serialized asset in the UID registry
- ✓ Target FY 2007 as point for IUID marking capabilities to be established
- ✓ Complete IUID marking of items and applicable embedded items by December 2010

Expected Outcomes – 2005

- ✓ Depot UID implementation plan published May 2005 *[IOC: 07/2005 & FOC: 2007]*
- ✓ IOC for paperless GFP management by October 2005
- ✓ UID of all GFP by January 2007
- ✓ DD Form 1662, DoD Property in the Custody of Contractors discontinued December 2006

Fixed and Variable Item IUID Master Data

Descriptive data	
Concatenated UII	Pedigree Data
Issuing Agency Code	Pedigree Data
Enterprise Identifier	Pedigree Data
Original Part Number	Pedigree Data
Serial Number	Pedigree Data
UII Type	Pedigree Data
Description	Pedigree Data
Batch/Lot	Pedigree Data
Current Part Number	Used for Legacy (Also used for PIPC)
Current Part Number Effective Date	Used for Legacy (Also used for PIPC)
Manufacturer Identifier	Used for Legacy (Also used for PIPC)
Parent Concatenated UII	Pedigree Data
ContractInfo	
Contract Number	Pedigree Data
Prime Contractor Identifier	Pedigree Data
Acceptance Code	Pedigree Data
Acceptance Date	Pedigree Data
Acquisition Cost	Pedigree Data
CLIN/SLIN/ELIN	Pedigree Data
Foreign Currency Code	Pedigree Data
Ship-to Code	Pedigree Data
Unit of Measure	Pedigree Data

Custody	
CAGE	Used for PIPC
Contract Number	Used for PIPC
DoDAAC	Used for PIPC
DUNS	Used for PIPC
Received Date	Used for PIPC
Sent Date	Used for PIPC
Status Flag	Used for PIPC
Category Code (E or M)	Used for PIPC
Mark	
Contents	Used for Legacy (Also used for PIPC)
Effective Date	Used for Legacy (Also used for PIPC)
AddedOrRemoved	Used for Legacy (Also used for PIPC)
Marker Code	Used for Legacy (Also used for PIPC)
Marker Identifier	Used for Legacy (Also used for PIPC)
Medium	Used for Legacy (Also used for PIPC)
Values in Mark Contents	Used for Legacy (Also used for PIPC)
Open Items	
Custodian or Steward (System)	
Location UID	
Program UID	
Item Status	
Current Dollar Value of Item	
Alias (system unique)	

Indicates data element may change during items life

UID: What Makes it so Special?

UID…

- **Provides *"The Key"* to discovery and correlation of item, real property and human resource information so …**
  - ✓ DoD can **consistently locate, control and value assets** anywhere and anytime
- Is an applied ***leading industrial practice*** interconnecting people, item, real property (places), organizations, force structure, programs, etc.
- Enables ***globally accessible and secure*** enterprise data

Status of Support

- International and Federal support building
- NATO STANAG and NATO life-cycle policy proposals
- Small business costs to implement are very flexible
- DCMA negotiating company specific implementation plans
- 84 companies have submitted 4,160 records into the UID registry
  - ✓ 36 Small Businesses – 1090 UID records

Did you know?

- Vehicles are available for transition planning
  - ✓ Program Plans from Government PMs
  - ✓ Corporate/Facility Single Process Initiatives through 2010
- Program Manager workshops to develop implementation plans
- Conferences targeting a wide mix of industry (84 presentations in the last year)
- DAU regional UID workshops and targeted training upon request (20 conducted to date)
- Uses existing marking process & marks with UID content
- Item identification and tracking can greatly enhance the quality of information available to Configuration Management, Systems Engineering, Logistics Support and Operational Planning

Defense Contract Management Agency DCMA's Role

Director, DCMA, given the authority to –

- lead the development of facility-wide or corporate Single Process Initiative strategies with DoD's top 30 suppliers and collectively with aircraft engine and avionics sector suppliers
- develop facility-wide or corporate Single Process Initiatives strategies with and contractor doing business with DoD, as requested
- grant implementation extensions when approved corporate/facility plan is in place

Top 31 Suppliers of Goods - Status

Summary

Plans/Corporate Concept Documents Submitted = 5

Companies with Plans in Development at Operating Unit = 16

No Plan Required Because They Will Mark Parts = 10

Joint UID Implementation Team

- Review team includes representatives across all Services and Agencies.
- To ensure that contractor UID implementation plans are consistent with the program needs of the service/agency customers.
- To act as the final authority to provide concurrence with contractor plans/proposed advance agreements/proposed contract changes prior to DCMA ratification actions.
- Review process takes approximately 6 months.
- ACO will convey approval of the plan to the contractor.
- The UID Program Management Office will resolve any failure to reach approval.

GSA Support to UID

- Educating their regional organizations regarding DoD UID and IUID
- Currently adding IUID at the order level on GSA schedule buys
- Reviewing the 70 (IT), 874V (Logworld) and/or 811B (shipping and Packing Supplies) schedule programs to establish a new SIN for IUID
- Consolidating a list of vendors with current IUID expertise (technical, training and/or consulting) for subcontracting and/or teaming with current schedule contractors to provide alternate solutions
- Poised to issue policy indicating that all MAS solicitations will be required to include the new marking clauses for IUID to be delivered to DoD once the final DFARS rule is

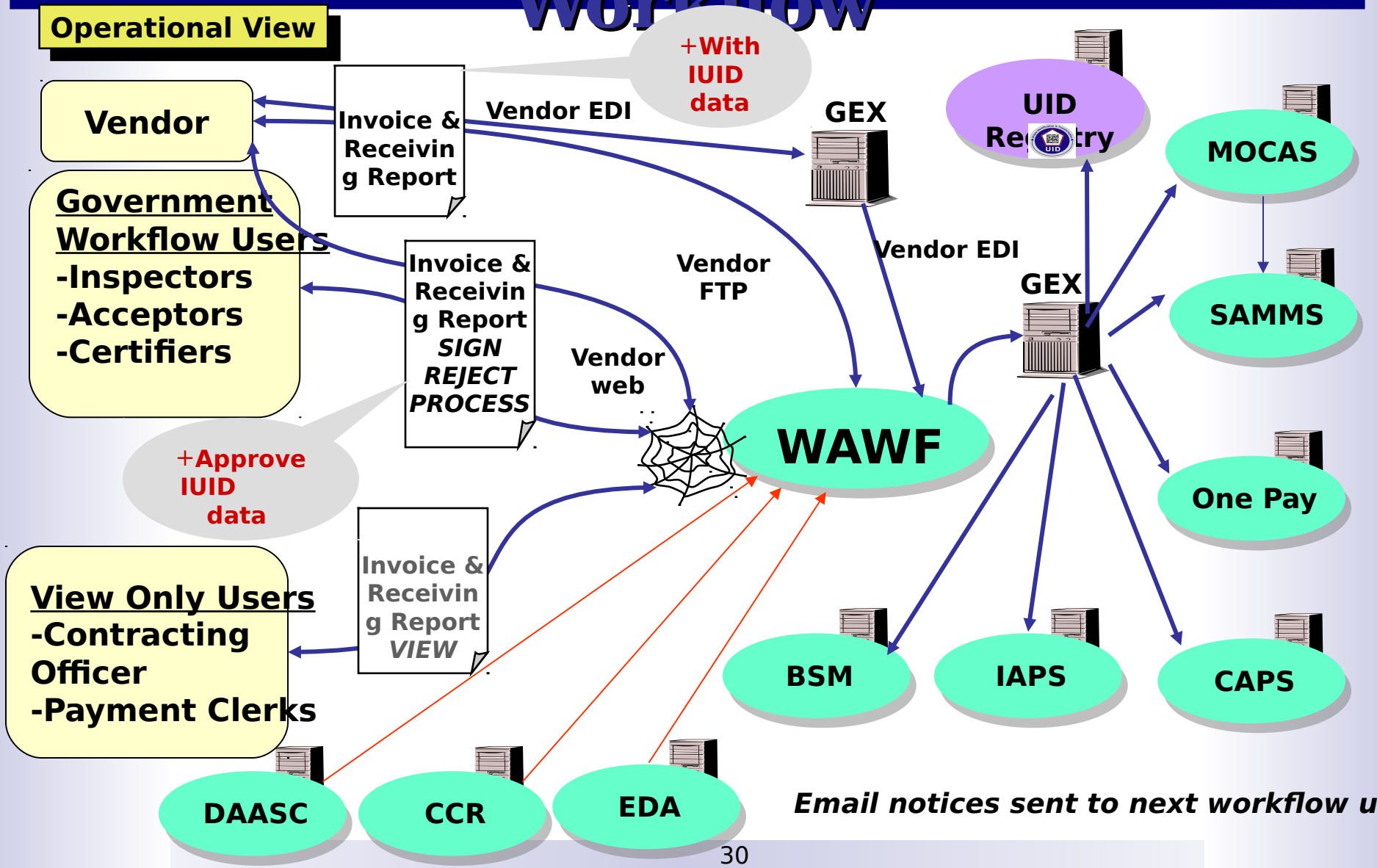
Strategic Next Steps for UID

- **May 05**
  - ✓ Finalize electronic GFP capability
  - ✓ Staff UID Directive
  - ✓ ACAT 1D Land Programs (St. Louis or Philadelphia)
  - ✓ ACAT 1D NAVSEA Programs (TBD)
- **June 05 - ACAT 1D UID Implementation Plans due**
  - ✓ Prepare for electronic GFP instructions and Deviation release
- **July 05 - Non-ACAT Aviation UID PM Workshop**
- **January 06 – Non-ACAT 1D UID Implementation Plans due**
- **Future Workshops – Tailored for non-ACAT programs**
  - ✓ Smaller, targeted mini-workshops where feasible
- **Integration Projects**
  - ✓ Defense Medical Logistics Support System
  - ✓ Small Arms Community, including Homeland Security (Tri-Service; Army Hub; Anniston Depot)
  - ✓ DCMA – WAWF Integration with Plant Clearance Automated Reutilization

Questions?

Backup

Wide Area Workflow

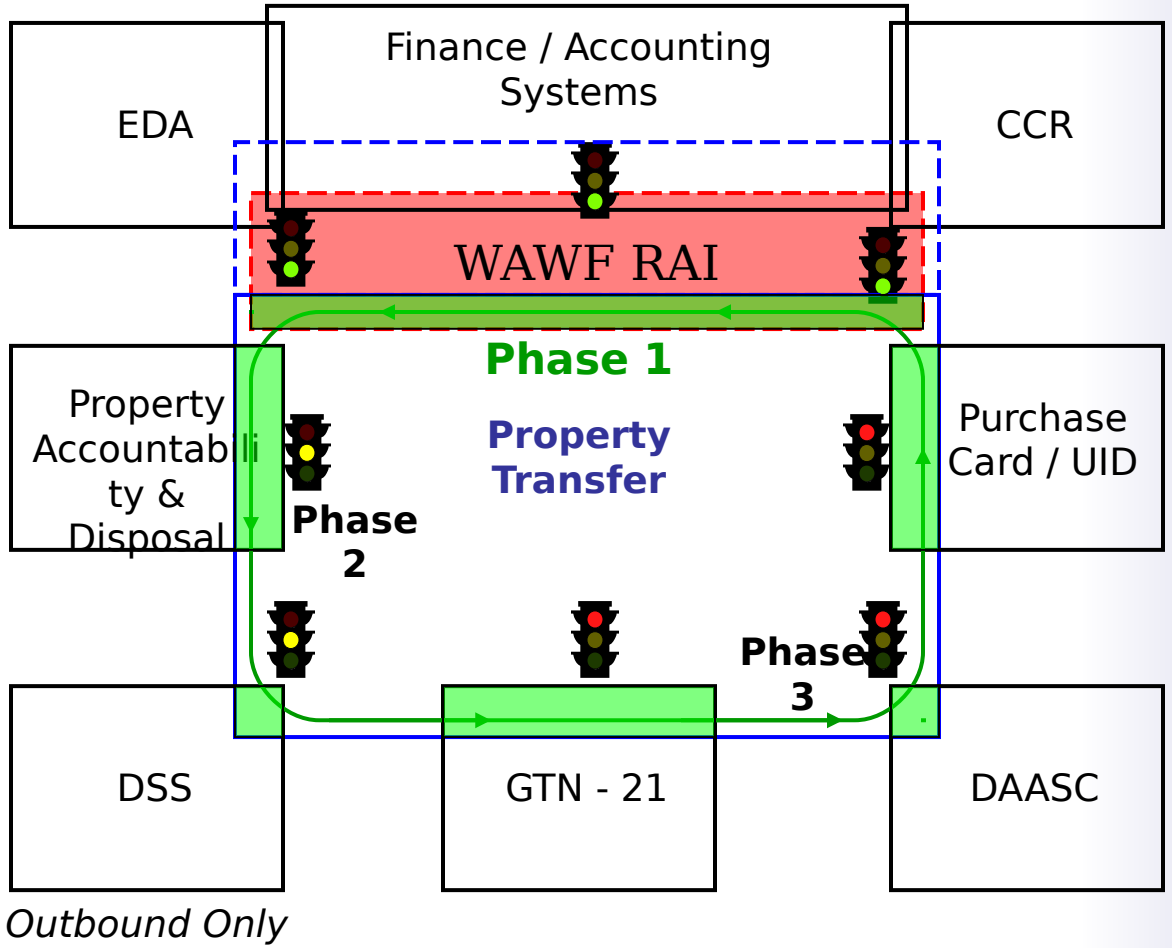


Electronic "Paperless" Property Process

Wide Area Workflow (WAWF) as the financial system is the base of a paperless process

WAWF is a transaction system, supporting a distinct part of the procurement lifecycle from –

- submission of electronic invoices
- through Inspection and Acceptance
- to Electronic Payment Receipt



UID—Integrated Situational Awareness of People, n

Today -- No UIDs

No integrated planning view

Requirement: Capability to integrate force structure planning for identifying and constituting deployable combined force modules.

- Who is available?
- With what equipment?
- Where are they now?
- How long can we support them?

RFID Tracking

Questions

To Be State -- UIDs

Integrated planning view

People, things and property related to force structure.

Deployment and constitution options can be continuously evaluated.

Required items identified, pre-positioned and tracked with RFID.

People and things can be identified to sites and facilities for rapid deployment response

Questions answered

What Have We Accomplished?

- Change 1 issued to MIL-STD 130 clarifying quality requirements for Direct Part Marking (Dot Peen, Laser & Chemical Etch)
- Requirement for electronic GFP defined
- Published Guidelines for the Virtual Unique Item Identifier
- Published Guidelines for Engineering, Manufacturing and Maintenance Documentation Requirements for UID Implementation
- Prepared a draft DoD Directive on Unique Identification of Tangible Entities & Attributes
- Legacy data elements and data submission formats have been identified and defined
- UID Registry design phase is complete; testing underway
- Initiated Site UID Registry
- UID PM Workshop for ACAT 1D Aviation Programs, March 8-9, 2005
- Successful NP ballot at TAG to add TEI Format Code to ISO/IEC 15434

Vision For Property Management

DoD, its coalition partners, and industry efficiently and effectively manage individual tangible items of Government property with near real-time situational awareness using globally unique item identification, enabled by speedy and accurate automatic data capture.

Goals and Objectives

DoD, its coalition partners, and industry efficiently and effectively manage individual tangible items of Government property with near real-time situational awareness using globally unique item identification, enabled by speedy and accurate automatic data capture.

Goal: Ubiquitous and Globally Unique Item Identifiers (UII)

- UIIs become keys to discovery and correlation of property information
- IUID Repository enables data use
- Property management processes streamlined

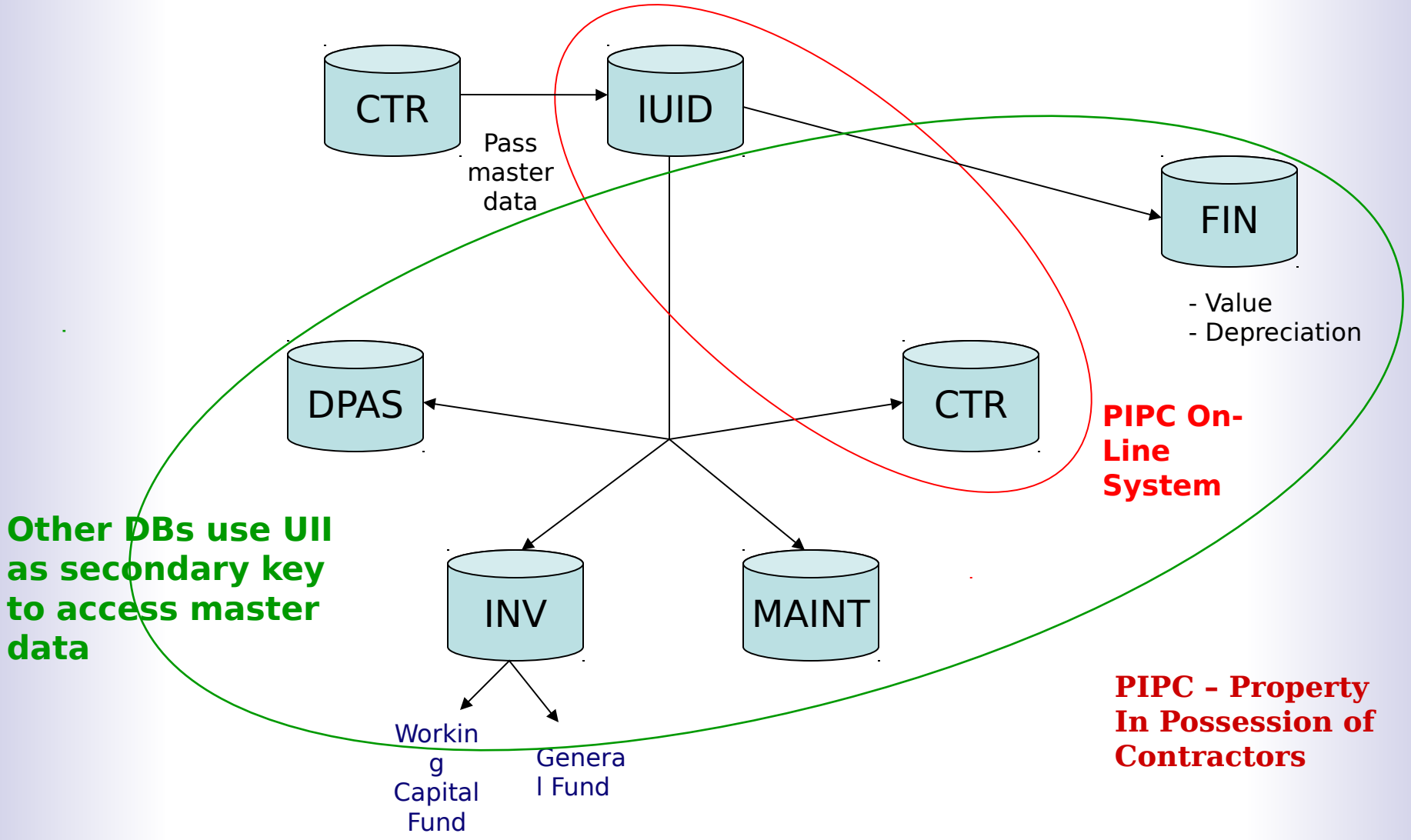
Goal: Capitalize on Leading Practices

- Adopt leading practices
- Low cost and readily available automatic data capture technologies

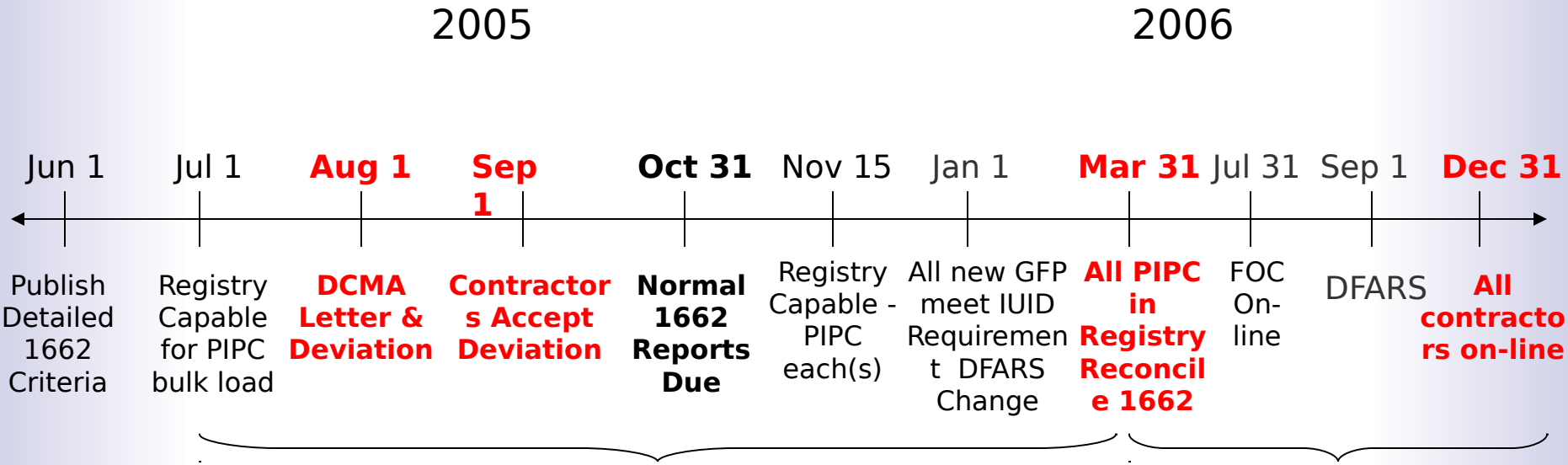
Principles for Future Property Environment

- Create data one time, reuse often
- Separate accounting from accountability
- Property should only be in one accountability system at a time
- Acquisition value will only be recorded and updated in the UID registry; enabling the elimination of the DD1662
- UID Registry will -
  - ✓ Never be an accountability system; but will be the audit trail of current and previous accountability systems
  - ✓ Maintain basic/master UID data
  - ✓ Not maintain contextual data (transactional data); the registry will point to accountability system(s)
  - ✓ Will be updated with key transaction events
- The concatenated UII will be the common data key across systems

Operating Construct for On-Line Property System



UID Registry/1662 timeline (2005-2006)

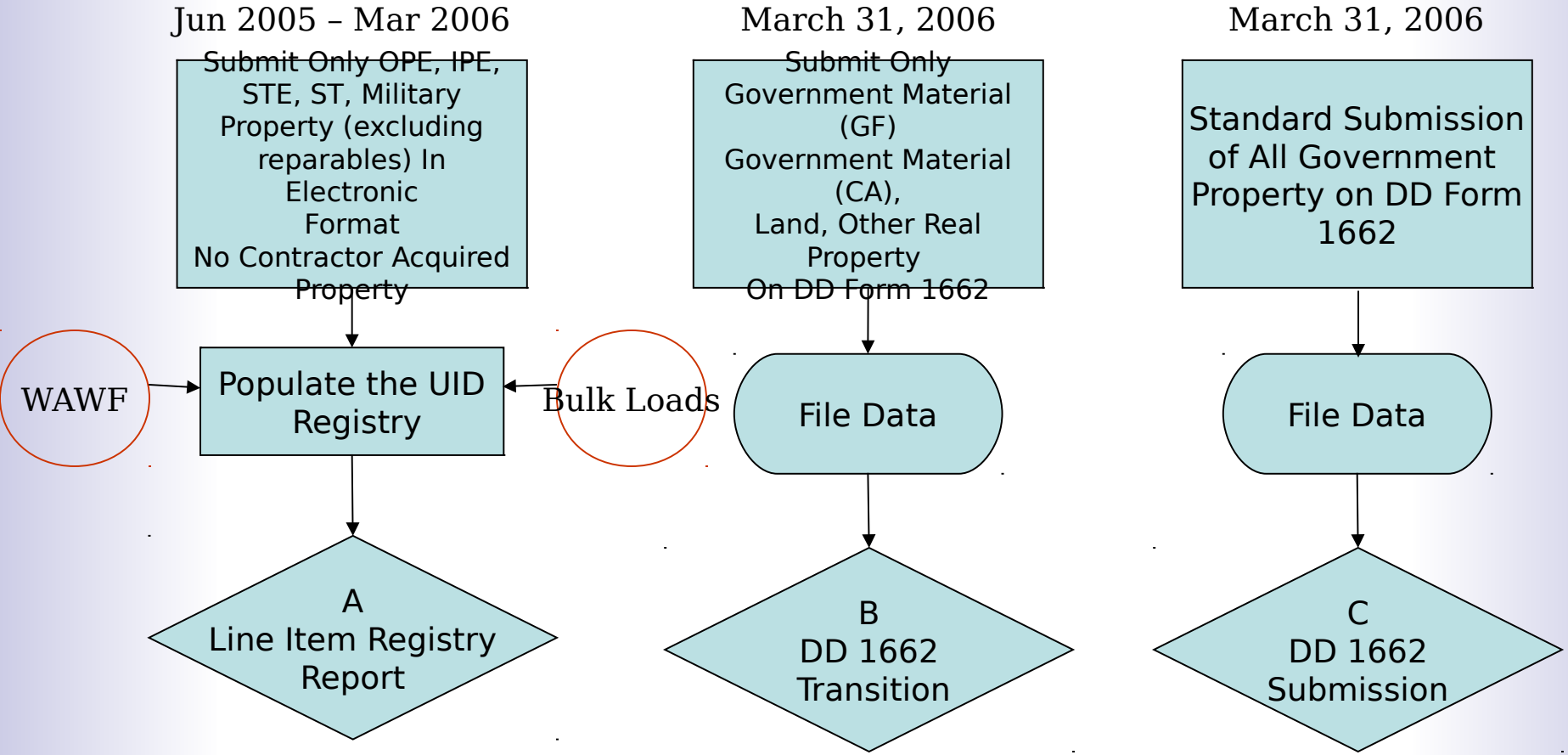


- Volunteer Contractors must complete 1662 reconciliation no later than Mar 31, 2006
- Data on all PIPC must be contained in registry prior to reconciliation

- Small businesses may submit paper 1662

DD 1662 Eliminated December 200

1662 Reconciliation Process/ Instructions



Reparables and serialized GFM are optional for A. Must be in A or B.

Grand Totals of A + B Should Equal C

Policy for Real Property –

Property Management Valuation

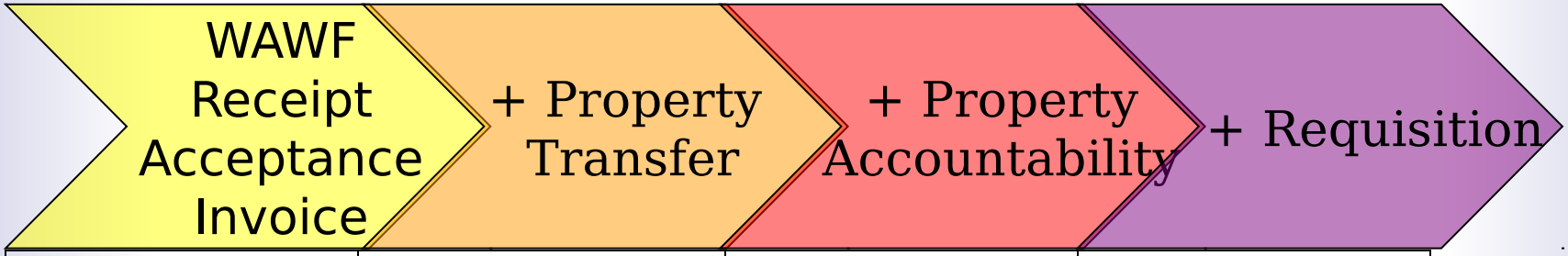
Establishing Values for Initial On-Line System

- Companies load registry with acquisition values for GFP
- DoD will establish net book value in fixed asset accounting system

Valuation of GFP After Initial Load

- Newly manufactured GFP – will be registered (with acquisition value) by delivering company
- Fabricated CAP -- will be registered by fabricating company (acquisition value) at time of possession by Government
- Legacy GFP – If value is unknown, acquiring company will determine a fair market value at time of acceptance and register
  - ✓ **Focus for March 2006 is for end items, not**

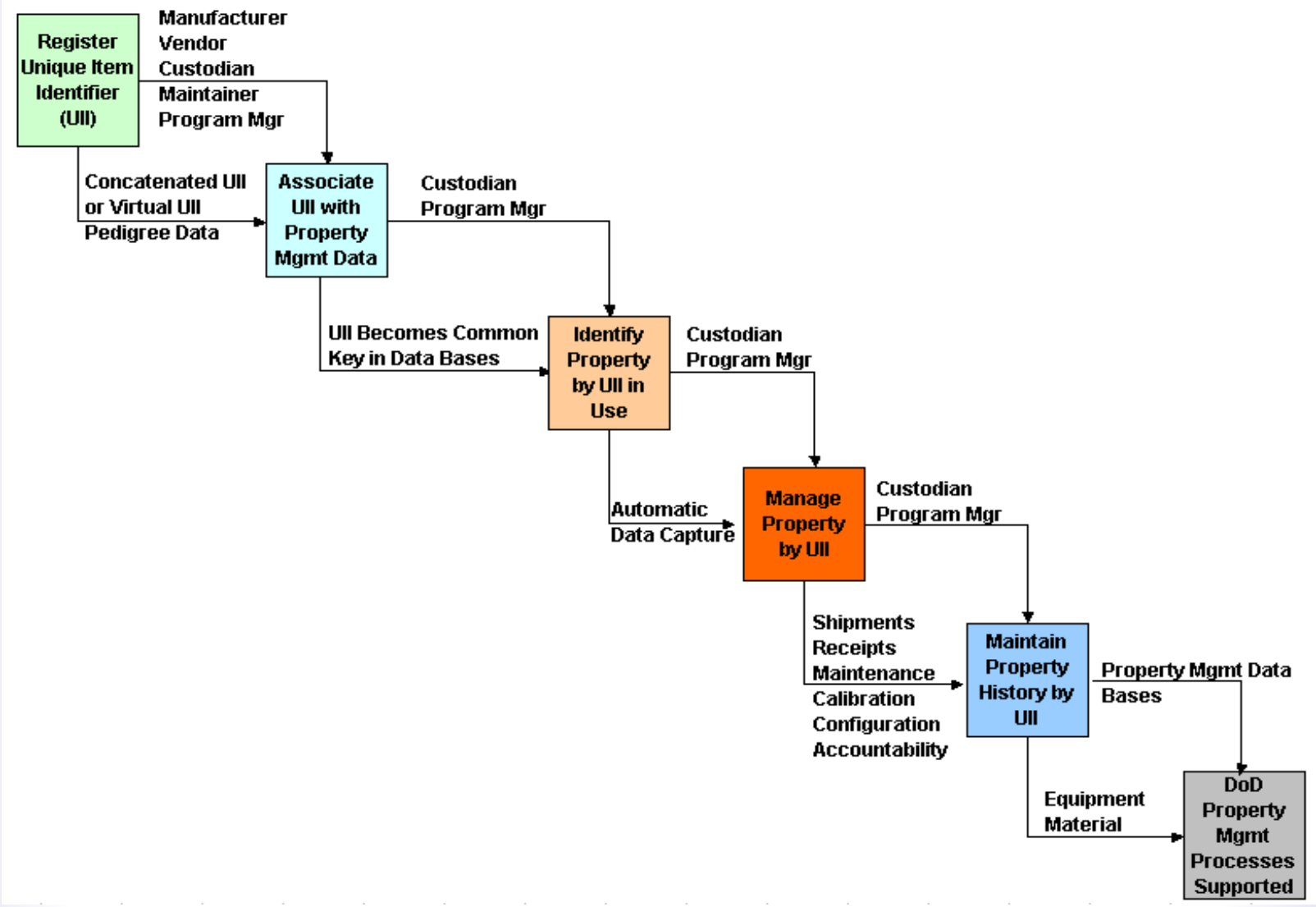
WAWF Development Plan



March 2005	December 2005	April 2006	August 2006

• Establish UID for New Items	• Adds 527R MRA, 140B, or 856 process
	• Movement of Gov't property
	  • Vendor to vendor
	  • K to K
	  • ship-in-place
	  • DoD to vendor
	  • Vendor to DoD
		• Connects to property accountability (transfer or disposal through PCARSS)
		• Assumes data population of GFP registry by majority of industry by March, 2006
			• Adds 856 S from DSS
			• Industry to Req. (511) (e.g. DAASC thru WAWF)

Use Case for IUID in Government Property Management



Definition of PIPC Registry

The **Property In Possession of Contractors (PIPC) Registry** provides storage of and access to data that identifies and describes property in the possession of contactors or “PIPC”. The PIPC registry is not a repository for data separate from the IUID registry, but rather is a term used to represent items in the IUID registry that are in the possession of, or controlled, by defense contractors. PIPC can consist of either:

Equipment – A tangible article of personal property that is complete in-and-of itself, durable, nonexpendable, and needed for the performance of a contract. Equipment generally has an expected service life of one year or more, and does not ordinarily lose its identity or become a component part of another article when put into use.

Material - Property that may be incorporated into or attached to a deliverable end item or that may be consumed or expended during the performance of a contract. It includes assemblies, components, parts, raw and processed materials, and small tools and supplies that lose their individual identity through incorporation into an end-item. **Material does not include Equipment, Special Tooling, Special Test Equipment, or Unique Federal Property.**